WHAT IS CLAIMED IS:

1. A high-power amplifier comprising:

an amplifying device for amplifying an input signal and outputting an amplified signal, said amplifying device having a single stage or multiple stage configuration;

a matching circuit connected between a final stage amplifying element and an output terminal; and

matching condition changing means for changing a matching condition of said matching circuit in response to output power of the amplifying device.

2. The high-power amplifier according to claim 1, wherein said matching condition changing means changes the matching condition of said matching circuit in order to increase an imaginary part of an output load impedance of the final stage amplifying element when the output power of said amplifying device reduces.

3. The high-power amplifier according to claim 1, wherein when said matching circuit includes a plurality of impedance circuits composed of impedance components, said matching condition changing means carries out on and off control of a switch in said impedance circuits in response to the output power of said amplifying device.

4. The high-power amplifier according to claim 3, wherein when a first impedance circuit having a DC-cut capacitor and a switch connected in series and a second impedance circuit having an inductor and a capacitor connected in series are connected in parallel, said matching condition changing means turns on said

switch when the output power of said amplifying device is greater than predetermined power, and turns off the switch when the output power of said amplifying device is less than the predetermined power.

5. The high-power amplifier according to claim 3, wherein when a first impedance circuit having a DC-cut capacitor and a switch connected in series and a second impedance circuit consisting of a capacitor are connected in parallel, said matching condition changing means turns off said switch when the output power of said amplifying device is greater than predetermined power, and turns on the switch when the output power of said amplifying device is less than the predetermined power.

6. The high-power amplifier according to claim 3, wherein when a bias feed circuit for supplying a bias to a collector or drain of the final stage amplifying element is connected to an input terminal of said matching circuit, a capacitor is connected in parallel with said bias feed circuit.

7. The high-power amplifier according to claim 3, wherein said switch in said impedance circuit is composed of a PIN diode.

8. The high-power amplifier according to claim 7, further comprising a bias circuit that utilizes a positive power supply voltage as a driving voltage to supply the PIN diode with one of positive polarity and negative polarity voltages in response to a control signal.

9. The high-power amplifier according to claim 3, wherein the

switch in said impedance circuit consists of a transistor switch.

10. The high-power amplifier according to claim 3, wherein the switch in said impedance circuit consists of a mechanical switch.

11. The high-power amplifier according to claim 1, further comprising voltage control means for controlling a base voltage or gate voltage of said amplifying device in order to reduce an idle current of said amplifying device when the output power of said amplifying device reduces.

12. The high-power amplifier according to claim 1, further comprising voltage control means for reducing a collector voltage or drain voltage of said amplifying device when the output power of said amplifying device reduces.

13. The high-power amplifier according to claim 1, further comprising a phase adjusting circuit for adjusting a pass phase of the input signal in order to reduce fluctuations in the pass phase when the matching condition of said matching circuit is changed, said phase adjusting circuit being placed on an input side of said amplifying device or in an interstage matching circuit.

14. The high-power amplifier according to claim 13, wherein said phase adjusting circuit comprises a series circuit having a capacitor and a switch connected in series and a capacitor connected in parallel with said series circuit, wherein said switch is turned on when the output power of said amplifying device is greater than predetermined power, and is turned off

when the output power of said amplifying device is less than the predetermined power.